

CLAIMS

What is claimed is:

1. An image enhancement method, applicable to monochrome text image in a digital image, for improving clearness of text, comprising steps of:

5 labeling text pixels and to-be-determined pixels in said image according to grayscales of image pixels;

 searching mostly-be text pixels from said to-be-determined pixels, and smoothing said mostly-be text pixels into text pixels;

 searching edge pixels from the rest of said to-be-determined pixels, and filling said
10 edge pixels; and

 filling said text pixels.

2. The method according to claim 1 further comprises a step of filling the rest of to-be-determined pixels with background pixels.

3. The method according to claim 1 wherein said step of searching mostly-be text
15 pixels from to-be-determined pixels further comprises steps of:

 fetching surrounding adjacent pixels of a to-be-determined pixel;

 counting the number of continuous text pixels in said surrounding adjacent pixels;
and

 determining if said to-be-determined pixel is a mostly-be text pixel according to said
20 counted number.

4. The method according to claim 3 wherein said step of determining a mostly-be text pixel is based on a counted number larger than 5.

5. The method according to claim 1 wherein said step of searching edge pixels from the rest of to-be-determined pixels further comprises steps of:

labeling a target pixel according to grayscale of a to-be-determined pixel;

surrounding said target pixel, defining extending lines in 8 directions;

5 fetching grayscale values of multiple continuous pixels adjacent to said target pixel in a line of two opposite directions;

determining styles of said multiple continuous adjacent pixels in said two opposite directions according to said grayscales; and

deciding if said target pixel is an edge pixel according to said determination.

10 6. The method according to claim 5 wherein said step of deciding a target pixel as an edge pixel is based on having multiple continuous adjacent text pixels in one direction of a line and having multiple continuous adjacent background pixels in opposite direction of said line.

15 7. The method according to claim 5 wherein said step of fetching grayscales of multiple continuous adjacent pixels in a line is to fetch two pixels adjacent to said target pixel in each direction of said line.

8. The method according to claim 1 wherein said step of filling edge pixels is to fill said edge pixels with text pixels.

20 9. The method according to claim 1 wherein said step of filling edge pixels is to fill said edge pixels with background pixels.

10. The method according to claim 1 wherein said step of filling edge pixels is to fill said edge pixels partially with background pixels and partially with text pixels.